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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,739	11/26/2001	Akira Nishimoto	10612/4	5667

7590 10/19/2004

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EXAMINER	
BOYD, JENNIFER A	

ART UNIT	PAPER NUMBER
1771	

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/991,739	NISHIMOTO ET AL.	
	Examiner	Art Unit	
	Jennifer A Boyd	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The Applicant's Amendments and Accompanying Remarks, filed July 28, 2004, have been entered and have been carefully considered. In view of Applicant's Remarks, the Examiner withdraws all previously set forth rejections as detailed in the Office Action dated May 13, 2004. The invention as currently claimed is not found to be patentable for reasons herein below.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claims 1 – 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimano et al. (US 6,348,422) in view of Nishida (US 6,080,797).

Shimano is directed to a moisture-permeable waterproof fabric (Abstract) which is highly useful because it rapidly releases water vapor, generated by the body, out of the clothing and also releases water droplets produced by the difference between the clothing interior and the outer temperature, while preventing water leakage, without steaminess or stickiness occurring inside the clothing even during periods of work or exercise under harsh environments (column 10, lines 55 – 65).

Shimano teaches a moisture-permeable waterproof fabric comprising a textile fabric and a moisture-permeable resin film containing a non-porous urethane resin layer formed on at least one side thereof (column 2, lines 60 – 68). Shimano teaches that the fabric may also have on the

non-porous urethane resin layer a non-porous film which is a two component type polyurethane resin (column 4, lines 35 – 45). Shimano notes that the two-component type polyurethane resin is a urethane resin which has been rendered hydrophilic (column 4, lines 54 – 60). Shimano notes that additional materials may be added to the resin solution (column 4, lines 65 – 69). Shimano notes that this fabric is useful in applications such as mountaineering because of its high waterproof properties and comfort (column 4, lines 45 – 55).

Shimano fails to teach that the two-component type polyurethane resin layer, or "surface protective resin layer", contains high moisture-absorbing/releasing and heat-generating organic fine particles as required by claim1. Shimano fails to disclose that the high moisture-absorbing/releasing and heat-generating organic fine particles are produced by introducing a crosslinking structure into an acrylonitrile polymer through hydrazine compound treatment to obtain an acrylonitrile cross-linked polymer; and chemically transforming nitryl groups in the acrylonitrile cross-linked polymer into carboxylate salt groups through hydrolysis, and the organic fine particles includes 1.0 mmol/g of the carboxylate salt groups as required by claim 2. Shimano fails to disclose that the high moisture-absorbing/releasing and heat-generating organic fine particles are produced by introducing a crosslinking structure by using, as a comonomer, a compound having two or more polymerizable vinyl groups to obtain an acrylonitrile cross-linked polymer; and chemically transforming nitryl groups in the acrylonitrile cross-linked polymer into carboxylate salt groups through hydrolysis, and the organic fine particles includes 1.0 mmol/g of the carboxylate salt groups as required by claim 3.

Nishida is directed to porous moisture-absorbing and desorbing polymer (Title). Nishida teaches that the polymer contains 2.0 – 12 meq/g of carboxyl groups of a salt type and has a

cross-linking structure (column 3, lines 1 – 10). Nishida teaches two manufacturing methods in column 2, lines 35 – 60. Nishida teaches that the particles are particularly useful as additives in various usage forms and that their applicable range is broad (column 10, lines 1 – 10). Nishida teaches that the particle can be applied to film, binders and resins among other substrates (column 19, lines 1 – 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the moisture-absorbing and desorbing polymer of Nishida into the outer two-component type polyurethane resin layer of Shimano motivated by the desire to further increase Shimano's desired properties of excellent moisture permeability and resistance of moisture condensation (column 1, lines 5 – 15).

As to claim 1, Shimano in view of Nishida discloses the claimed invention except for "surface protective resin" is present in a dry mass of 0.5 to 10 g/m^2. It should be noted that the amount of surface protective resin is a result effective variable. For example, as the amount of surface protective resin changes, the moisture permeability of the layer changes. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a surface protective resin layer with a dry mass of 0.5 to 10 g/m^2 since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the amount of surface protective resin motivated by the desire to control the moisture-permeability of the composite.

As to claims 1 and 4, although Shimano in view of Nishida does not explicitly teach the claimed urethane resin with a coefficient of moisture absorption is 40% or more at 30C and 90% of relative humidity as required by claim 1 and the composite fabric has 3% RH or more of a humidity difference between the surface protective resin side of the fabric and the moisture-permeable resin layer side of the fabric as required by claim 4, it is reasonable to presume that urethane resin with a coefficient of moisture absorption is 40% or more at 30C and 90% of relative humidity as required by claim 1 and the composite fabric has 3% RH or more of a humidity difference between the surface protective resin side of the fabric and the moisture-permeable resin layer side of the fabric as required by claim 4 is inherent to Shimano in view of Nishida. Support for said presumption is found in the use of like materials (i.e. a composite comprising a hydrophilic urethane resin containing moisture absorbing/releasing and heat-generating particles, base fabric and a non-porous urethane film) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of urethane resin with a coefficient of moisture absorption is 40% or more at 30C and 90% of relative humidity as required by claim 1 and the composite fabric has 3% RH or more of a humidity difference between the surface protective resin side of the fabric and the moisture-permeable resin layer side of the fabric as required by claim 4 would obviously have been present once the Shimano in view of Nishida product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

As to claims 2 and 3, even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process

claim is the same or an obvious variant from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the Applicant to show unobvious differences between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983).

Response to Arguments

4. Applicant's arguments with respect to claims 1- 4 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Boyd whose telephone number is 571-272-1473. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer Boyd
October 13, 2004

Ula Ruddock
Ula C. Ruddock
Primary Examiner
Tech Center 1700